

PEER REVIEW HISTORY

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ARTICLE DETAILS

TITLE (PROVISIONAL)	A qualitative exploration of information-seeking by electronic nicotine delivery systems (ENDS) users in New Zealand
AUTHORS	Robertson, Lindsay; Hoek, Janet; Blank, Mei-Ling; Richards, Rosalina; Ling, Pamela; Popova, Lucy; McMillan, Lydia

VERSION 1 – REVIEW

REVIEWER	Victor M. Cardenas University of Arkansas for Medical Sciences Fay W. Boozman College of Public Health, USA
REVIEW RETURNED	30-Apr-2018

GENERAL COMMENTS	The last sentence of the abstract seems to suggest that there would be a benefit to smokers from usage of or switching to ENDS. Though the methods are appropriate for a qualitative study, the conclusion drew and outlined in the last paragraph of the introduction is that health authorities should spend resources in publicizing the benefits of ENDS to smokers, as suggested in your conclusions "developing retail guidelines that promote transitions from smoking to exclusive ENDS use." That strongly depends on the efficacy of the switching, which is ignored by the authors. I am not sure there is evidence that smokers switch to ENDS. It is unclear how many hundreds of people you had to contact to find these 19 exclusive ENDS users, or if that was a referral from the vaping shops. How do you know if they were not disclosing the self-reported ENDS users continue to smoke?
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REVIEWER	Ce Shang IHRP,UIC cshang@uic.edu I personally know Lindsay Robertson but my review is impartial.
REVIEW RETURNED	18-May-2018

GENERAL COMMENTS	This study conducted qualitative interviews of E-cig users in New Zealand regarding their ENDS use patterns and ENDS information-seeking behaviors. 39 current adult ENDS users were recruited for interviews and relevant information were coded by the authors. They found that people who seek information rely on word-of-mouth and online sources than on health data. There is also evidence that specialist retailers were considered to be more helpful than non-specialist retailers. My comments are listed below. Major concerns: 1, the paper frequently talked about transition from smoking to exclusive ENDS use. However, there is no description on the smoking history of the ENDS users. For example, whether participants were never smokers when they initiated ENDS use. In
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	<p>addition, there is lack of conclusive evidence on whether ENDS can help quitting. The authors need to be clear about the limitation of the existing evidence.</p> <p>2. In general, I feel this study is pro the harm reduction effect of ENDS. However, the effect is still up for debate in the field. At least, the authors need to acknowledge the lack of conclusive evidence on the benefits of ENDS.</p> <p>3. I think the scientific premise of any policy implication is lacking. Considering the lack of conclusive evidence on the health effects of ENDS, most public health agencies are very cautious about their views on ENDS. It is not surprising that there is not sufficient information from trustworthy sources. The conclusion about consumers' confusion is a reflection of this reality. Without the advances in science, policy recommendations such as establishing a retail licensing scheme is premature.</p> <p>Other comments</p> <p>1, Table 1: there are several columns in this table , such as smoking status, liquid nicotine level. But I don't see sufficient discussion about these information. For example, why did the authors choose to focus on these aspects of ENDS use. How do these characteristics inform the interviews and the goal of this study?</p> <p>2, Page 4 Introduction lines 20-26. I don't think these are conflicting results. One was about the general prevalence of searching ENDS, the other was about the frequencies of ENDS search. These are studies looking at different behaviors, it could be that smokers who are interested in ENDS and young people were driving the increases in search frequencies, whereas the general public rarely searched for the information.</p> <p>3, Page 12, perceptions very often varies by individuals and by culture. It may be useful to distinguish concerns about health and concerns about safety. They are different things. Safety concerns could be about batteries and incidences of explosion or nicotine poisoning.</p> <p>4, It may be useful to address how common such semi-structural reviews are conducted and whether they can be replicated.</p>
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REVIEWER	Alison Breland Virginia Commonwealth University, USA
REVIEW RETURNED	14-Jun-2018

GENERAL COMMENTS	<p>Summary:</p> <p>This manuscript describes a qualitative study of ENDS users and dual ENDS/cigarette users, to determine how they obtain information about ENDS. The topic is timely and important, as more individuals are using ENDS. The manuscript is well-written, includes thought-provoking results, and has key implications about the role of public health advocates in improving the quality of information to which ENDS users have access.</p> <p>The manuscript could be improved by addressing the below concerns.</p> <p>Methods:</p> <p>I see that the complete interview is in supplementary materials, and the authors have very briefly described the content of the questions, but more detail about the questions could be added to the main text of the manuscript (without going to the supplemental material, it was difficult to get a solid sense of the questions). In addition, more information about the coding strategy could be added—it was not clear from the data analysis section exactly how the coding was</p>
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	<p>conducted. Also, why did the authors decide to have only one person code all of the data, as opposed to having multiple coders (so that inter-rater reliability could be calculated)? Having multiple coders would strengthen the analysis.</p> <p>Results: Very little is included about the users' trial and uptake of ENDS, although this is mentioned as part of the design of the study. There are various other questions in the interview that are also not described in this manuscript. The authors might add this information, or explain why it is not included (with adjustments to the abstract as needed).</p>
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VERSION 1 – AUTHOR RESPONSE

Reviewer: 1, Victor M. Cardenas, University of Arkansas for Medical Sciences Fay W. Boozman College of Public Health, USA.

Please state any competing interests or state 'None declared': None declared

1. The last sentence of the abstract seems to suggest that there would be a benefit to smokers from usage of or switching to ENDS. Though the methods are appropriate for a qualitative study, the conclusion drew and outlined in the last paragraph of the introduction is that health authorities should spend resources in publicizing the benefits of ENDS to smokers, as suggested in your conclusions "developing retail guidelines that promote transitions from smoking to exclusive ENDS use." That strongly depends on the efficacy of the switching, which is ignored by the authors. I am not sure there is evidence that smokers switch to ENDS.

Response:

The reviewer has raised a very important point and we have made changes throughout the manuscript to reflect the latest and most comprehensive report on evidence on ENDS, from the National Academies of Science Engineering and Medicine [<http://nationalacademies.org/hmd/Reports/2018/public-health-consequences-of-ecigarettes.aspx>] and other recent studies. Specifically, we have now emphasised that the current evidence suggests completely substituting ENDS for combustible tobacco cigarettes will likely reduce users' exposure to toxicants and carcinogens. However, we make it clear that evidence of ENDS' long-term risks is lacking, and that many ENDS users adopt dual use patterns where they use both combustible tobacco and electronic nicotine delivery systems. Our main edits in relation to this point are as follows:

"Health authorities could help meet potential users' information needs by... mandating licensing for retailers with guidelines to disclose uncertainty over ENDS' efficacy for cessation and longer-term health effects, and the need for complete substitution of ENDS for combustible cigarettes among those who use these products." (Abstract, page 2-3)

"Although full safety profiles on ENDS use are yet to be developed, and ENDS' efficacy as a smoking cessation tool remains disputed,¹⁴⁻¹⁶ many countries, including NZ, allow sales of nicotine-containing e-liquid.¹⁷ This stance assumes that full transition from smoking to exclusive ENDS use will present fewer risks than continued smoking.¹⁸ However, given uncertainty over ENDS' risks and benefits, and because the dominant usage pattern is dual use rather than complete substitution,^{19,20} it is timely to assess...." (Intro, page 5)

"Given that many smokers do not cease smoking combustible tobacco after "switching" to ENDS,^{16,19,20,24...}" (Intro, page 6).

"...retail licensing for all ENDS sellers could enable dissemination of up-to-date and objective information that incorporates best practices from smoking cessation. Conditions could also be established, such as requiring retailers to demonstrate knowledge of smoking cessation strategies, and mandating provision of information disclosing the risks of ENDS and the risks

of dual use. Licensing standards could require retailers to apprise potential users of specific points, such as safety information or the lack of evidence supporting ENDS efficacy for smoking cessation..." (Discussion, page 20).

2. It is unclear how many hundreds of people you had to contact to find these 19 exclusive ENDS users, or if that was a referral from the vaping shops. How do you know if they were not disclosing the self-reported ENDS users continue to smoke?

Response:

As we wrote in the 'Sample and recruitment' section (p. 6-7), we used "social media and community advertising (including in vape stores), and whanaungatanga (kinship) and professional networks" to recruit participants. Inclusion criteria were broad and we sought ENDS users (defined as past 30-day users, to promote diversity in experiences), including daily and intermittent smokers, quitters, and former smokers. We set approximate quotas of 20 participants in each group (exclusive ENDS use and dual use) a priori. Thus, participants did not have an incentive to not disclose their continued smoking. We did not seek out or receive referrals of 'exclusive ENDS users' as determined/ identified by vape shops. We also note that – for a qualitative study such as this – the difference in prevalence between dual users and exclusive ENDS users has no bearing on our results or conclusions.

Reviewer 2: Ce Shang, IHRP,UIC, cshang@uic.edu

Please state any competing interests or state 'None declared': I personally know Lindsay Robertson but my review is impartial.

Please leave your comments for the authors below

This study conducted qualitative interviews of E-cig users in New Zealand regarding their ENDS use patterns and ENDS information-seeking behaviors. 39 current adult ENDS users were recruited for interviews and relevant information were coded by the authors. They found that people who seek information rely on word-of-mouth and online sources than on health data. There is also evidence that specialist retailers were considered to be more helpful than non-specialist retailers. My comments are listed below.

Major concerns:

1. The paper frequently talked about transition from smoking to exclusive ENDS use. However, there is no description on the smoking history of the ENDS users. For example, whether participants were never smokers when they initiated ENDS use. In addition, there is lack of conclusive evidence on whether ENDS can help quitting. The authors need to be clear about the limitation of the existing evidence.

Response:

Our interviews did probe participants' smoking histories, but we did not include these analyses in the main body of results because of word length considerations, and because those details were not central to our primary research question. We did not include neversmokers who had initiated ENDS use in this component of the study, we only included former and current smokers who – at the time of the interview – reported using ENDS exclusively or dual using with combustible tobacco. We explain our recruitment strategy in the 'Sample and Recruitment' paragraph of the Methods (see second line onwards). Table 1 (page 10)

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indicates which participants were exclusive ENDS users and which were dual users, and the cigarettes per day consumed by the dual users. We did not feel that adding further detail to this Table, such as age at smoking initiation, would add to the overall manuscript and that it could instead detract from readability of the table.

In relation to the second point concerning whether ENDS can help quitting, we agree with this very important point and we have added material throughout the manuscript to emphasise that ENDS may not support smoking cessation and that dual use is the prevalent pattern of use (please also refer to our response to reviewer 1's first comment).

2. In general, I feel this study is pro the harm reduction effect of ENDS. However, the effect is still up for debate in the field. At least, the authors need to acknowledge the lack of conclusive evidence on

the benefits of ENDS.

Response:

As per our previous comment, we agree with the point you and reviewer 1 have raised and we have added material throughout the manuscript to note that ENDS' long-term risks are unknown and that users and potential users should be apprised of potential risks. In addition, we have noted that retailers should also disclose that there is little evidence ENDS are actually effective smoking cessation aids (with many users adopting patterns of dual use – switching between combustible and electronic products).

3. I think the scientific premise of any policy implication is lacking. Considering the lack of conclusive evidence on the health effects of ENDS, most public health agencies are very cautious about their views on ENDS. It is not surprising that there is not sufficient information from trustworthy sources. The conclusion about consumers' confusion is a reflection of this reality. Without the advances in science, policy recommendations such as establishing a retail licensing scheme is premature.

Response:

We agree that we do not yet have evidence regarding ENDS' long-term risks and benefits and note the caution many health agencies and researchers have expressed. Yet while we agree with this caution, we suggest it is also important to take a pragmatic perspective that recognises practice is evolving irrespective of the evidence base. ENDS retail outlets exist in many countries and have increased in New Zealand, even at a time when sales of e-liquids containing nicotine have not been allowed (a recent court case has effectively allowed sales of e-liquids containing nicotine). While a retail licensing scheme may appear to support wider availability of ENDS products, we respectfully suggest that it is preferable to the status quo, which allows any retailer, irrespective of their product knowledge, to sell ENDS devices. In recommending ENDS retail licensing, we are suggesting a mechanism that allows restrictions and requirements (including customer information requirements) to be placed on vape shops. This measure seems especially important given the lack of conclusive long-term evidence of ENDS, because it will allow authorities to regulate vape shops as new evidence (of harm or otherwise) emerges.

We have made some minor changes to the language in this paragraph, which we hope better communicates our position and the rationale underpinning our views (page 20):

“...mandating retail licensing for all ENDS sellers could enable dissemination of up-to-date and objective information that incorporates best practices from smoking cessation. Conditions could also be established, such as requiring retailers to demonstrate knowledge of smoking cessation

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strategies, and mandating provision of information disclosing the risks of ENDS and the risks of dual use. Licensing standards could require retailers to apprise potential users of specific points, such as safety information or the lack of evidence supporting ENDS efficacy for smoking cessation, and ensure all point-of-sale materials contained links to official websites and behavioural counselling services.”

Other comments

1, Table 1: there are several columns in this table, such as smoking status, liquid nicotine level. But I don't see sufficient discussion about these information. For example, why did the authors choose to focus on these aspects of ENDS use. How do these characteristics inform the interviews and the goal of this study?

Response:

We included these details in Table 1 (page 10) to provide context for each study participant. This information is not central to our research question, and providing some basic details of participants in a table is standard in qualitative research, and parallels the sample profiles provided for quantitative studies. In the 'Participant characteristics' paragraph (page 8-9), we have included a sentence to clarify that these details are supplementary:

“Table 1 shows supplementary information for each participant:...”

2, Page 4 Introduction lines 20-26. I don't think these are conflicting results. One was about the general prevalence of searching ENDS, the other was about the frequencies of ENDS search. These

are studies looking at different behaviors, it could be that smokers who are interested in ENDS and young people were driving the increases in search frequencies, whereas the general public rarely searched for the information.

Response:

We thank the reviewer for identifying this nuance; we have adjusted the wording in relation to the frequencies of ENDS internet searches (page 5):

“A 2013 survey of the US public found few people (<5%) searched for information about ENDS, though current tobacco smokers were around eight times as likely as non-smokers to look for information.⁷ Other studies report that internet search engine queries for ENDS have increased exponentially over time...”

3, Page 12, perceptions very often varies by individuals and by culture. It may be useful to distinguish concerns about health and concerns about safety. They are different things. Safety concerns could be about batteries and incidences of explosion or nicotine poisoning.

Response:

Thank you for noting this important point; we have changed the language from “safe” and safety” (which we agree could be interpreted as referring to exploding devices etc) to “health benefits/ health effects/ harmless” as appropriate throughout the manuscript.

4, It may be useful to address how common such semi-structural reviews are conducted and whether they can be replicated.

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Response:

Semi-structured interviews are a standard qualitative research methodology. Although reliability and validity are important concerns with qualitative work, replication is not typically a benchmark because qualitative studies use purposive and theoretical sampling, rather than quantitative sampling approaches. We have discussed the approaches we took to ensuring data validity in the Methods section (in the ‘Data Analysis’ paragraph). We have noted our process of triangulation, where we compared participants’ accounts and where members of the research team regularly met to compare data interpretations (p.8):

“LR coded the transcripts using a line-by-line open coding approach; she and JH met frequently to discuss the data analysis and codes, and to compare participants’ accounts with particular attention to divergent views and practices. To triangulate the data, LR and JH reviewed interpretations and the themes these supported, consolidated the coding structure.”

Reviewer 3: Alison Breland, Institution and Country: Virginia Commonwealth University, USA
Please state any competing interests or state ‘None declared’: None declared.

Please leave your comments for the authors below

Summary:

This manuscript describes a qualitative study of ENDS users and dual ENDS/cigarette users, to determine how they obtain information about ENDS. The topic is timely and important, as more individuals are using ENDS. The manuscript is well-written, includes thought-provoking results, and has key implications about the role of public health advocates in improving the quality of information to which ENDS users have access.

The manuscript could be improved by addressing the below concerns.

Methods:

1. I see that the complete interview is in supplementary materials, and the authors have very briefly described the content of the questions, but more detail about the questions could be added to the main text of the manuscript (without going to the supplemental material, it was difficult to get a solid sense of the questions).

Response:

Thank you for this suggestion, we have expanded the ‘Data collection’ paragraph in the Methods (page 7) to provide more detail about the questions we asked:

“Specifically, we asked participants what information they had sought about ENDS, where they

had searched for this information, what they retrieved, how helpful each information source was, where they had found information about different devices, and their perceptions about ENDS' potential harms and benefits.”

2. In addition, more information about the coding strategy could be added—it was not clear from the data analysis section exactly how the coding was conducted. Also, why did the authors decide to

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have only one person code all of the data, as opposed to having multiple coders (so that inter-rater reliability could be calculated)? Having multiple coders would strengthen the analysis.

Response:

We have expanded the ‘Data analysis’ paragraph (pages 7-8) to explain the coding and analysis. Although one author coded the data, two authors undertook a detailed review of transcripts, compared interpretations, and agreed on the themes reported and the quotations used to illustrate and nuance these. The new text reads as follows:

“This widely used analytic approach comprises coding interview data, reflecting on the data, identifying recurring phrases and themes, and balancing similarities and differences in participants’ accounts to develop a nuanced interpretation of the full dataset. 20 LR coded the transcripts using a line-by-line open coding approach; she and JH met frequently to discuss the data analysis and codes, and to compare participants’ accounts with particular attention to divergent views and practices. To triangulate the data, LR and JH reviewed interpretations and the themes these supported, consolidated the coding structure.”

3. Results: Very little is included about the users’ trial and uptake of ENDS, although this is mentioned as part of the design of the study. There are various other questions in the interview that are also not described in this manuscript. The authors might add this information, or explain why it is not included (with adjustments to the abstract as needed).

Response:

We have inserted a statement in the ‘Sample and recruitment’ paragraph of the Methods to explain that this particular study on information-seeking was part of a larger project examining ENDS use in New Zealand (p. 6):

“This study was part of a larger project examining ENDS use in NZ. To explore informationseeking behaviours, we recruited...”

We have published findings on dual users’ trial and uptake of ENDS and have further manuscripts in preparation; these examine ENDS trial and use by Māori and Pacific participants (population groups with higher smoking prevalence); uptake and use among non-smokers, and perceptions of ENDS regulation. We have removed the reference to “trial and uptake of ENDS” which was originally in the abstract.

VERSION 2 – REVIEW

REVIEWER	Alison Breland Virginia Commonwealth University, USA
REVIEW RETURNED	30-Jul-2018
GENERAL COMMENTS	<p>The authors have addressed the concerns I raised in my initial review. I had just two other comments:</p> <p>First, in the response to another reviewer’s comments, the authors indicate that they had a goal of 20 participants for each group (exclusive ENDS use and dual use), but I did not see any results that were broken down by group. I did not ask this in my initial review, but am wondering if there were any apparent differences observed between exclusive ENDS users and dual users, in terms of their information-seeking? It also might be useful to break down demographics by group and report mean CPD (for dual users),</p>

	<p>mean liquid concentration used, mean length of time vaping, etc.</p> <p>Second, the revised version of the paper did not appear to have the supplemental material included, but I assume it will still be included in the manuscript?</p>
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VERSION 2 – AUTHOR RESPONSE

Reviewer comments:

1. First, in the response to another reviewer's comments, the authors indicate that they had a goal of 20 participants for each group (exclusive ENDS use and dual use), but I did not see any results that were broken down by group. I did not ask this in my initial review, but am wondering if there were any apparent differences observed between exclusive ENDS users and dual users, in terms of their information-seeking?

Response:

We did not systematically examine the data for differences between the exclusive ENDS users and the dual users. It is often the case during qualitative research that while conducting the interviews, one gets a general sense of potential similarities and differences in the data, which can be explored more rigorously during the analysis. We did not get any sense that there were differences in information seeking between the exclusive ENDS users and dual users in our sample, therefore we did not undertake this analysis.

Participants generally discussed the information they sought and found at the very beginning of their vaping experience, which is one possible reason why we did not observe any differences. All participants were former cigarette smokers who had 'switched' to ENDS (albeit with varying degrees of success). Thus, it is perhaps unsurprising that the information-seeking focused on ENDS' health effects, their risks and benefits relative to combustible tobacco, and practical information about how to source and use ENDS.

We might expect some differences in information-seeking between participants in this particular sample, and never-smoking ENDS users (who for instance, may have initiated ENDS use for perceived weight control benefits or other reasons). We are in the process of developing a separate manuscript examining ENDS use among never-smokers, which may provide some further insights on that subgroup of ENDS users.

2. It also might be useful to break down demographics by group and report mean CPD (for dual users), mean liquid concentration used, mean length of time vaping, etc.

Response:

We have amended Table 1 in line with this suggestion.

3. Second, the revised version of the paper did not appear to have the supplemental material included, but I assume it will still be included in the manuscript?

Response:

We did not make any changes to the supplemental material and we will upload it during this revision process to ensure it is available for the reviewer/ Editor.